CENTER FOR INSTITUTIONAL REFORM AND THE INFORMAL SECTOR

University of Maryland, College Park

Center Office: IRIS Center, 2105 Morrill Hall, College Park, MD 20742
Telephone (301) 405-3110 Fax (301) 405-3020
http://www.inform.umd.edu/IRIS

GENDER AND CORRUPTION

November 1999

Anand Swamy, Young Lee, Steve Knack, and Omar Azfar

Working Paper #232

This publication was made possible through support provided by the U.S. Agency for International Development, under Cooperative Agreement No. DHR-0015-A-00-0031-00 to the Center for Institutional Reform and the Informal Sector (IRIS) and administered by the Office of Economic and Institutional Reform, Center for Economic Growth, Bureau for Global Programs, Field Support and Research.

Authors: Omar Azfar, Young Lee, Anand Swamy and Stephen Knack, IRIS Center, Department of Economics, University of Maryland, College Park.

Gender and Corruption

First Version: April 1999
This Version: November 1999

Anand Swamy, Stephen Knack, Young Lee, and Omar Azfar*

Abstract: Using several independent data sets, we investigate an aspect of corruption that has received little attention: its differential incidence by gender. We show using micro data that women are less involved in bribery, and are less likely to condone bribe taking. Cross-country data show that corruption is less severe where women comprise a larger share of the labor force, and where women hold a larger share of parliamentary seats.

*ASwamy@Williams.edu, Sknack@WorldBank.Org, Young@iris.econ.umd.edu, Omar@iris.econ.umd.edu. We thank Gary Anderson and Jeffery Livingston for valuable research assistance. World Values Survey data are available through the Inter-University Consortium for Political and Social Research (ICPSR); neither the ICPSR nor the original collectors of the data are responsible for analysis and interpretations of the data contained herein. We are extremely grateful to the World Bank, especially to Amitabha Mukherjee and Randi Ryterman, for making available the Georgia corruption survey. We also thank Barbara Bergmann, Roger Betancourt, Chris Clague, Jean Ensminger, Avner Greif, Tony Lanyi, Margaret Madajewicz, Mieke Meurs, and participants in the ISNIE conference in Washington DC in September 1999 for helpful comments

I. Introduction

In recent years there has been a concerted effort, by various national governments and international organizations, to increase the representation of women in public life. A prominent example is the recent (unsuccessful) initiative to pass legislation to reserve one-third of the seats in India's parliament for women (The Hindu, 1999). What would be the consequences of such policies? Proponents suggest that women may make different policy choices than men, and indeed, there is some evidence supporting this proposition.[1] Recently, however, an even more provocative claim has been made: in several different locations, influential public officials have advocated increasing representation of women on the grounds that this will lower the extent of corruption.[2] In Mexico city the police chief has taken away ticket-writing authority from the city's 900 male traffic policemen and created a new force consisting exclusively of women, hoping to reduce corruption (Moore, 1999). A similar policy has also been introduced in Lima, Peru where, it is claimed, there has been a fall in corruption after the introduction of women (McDermott, 1999).[3] There is, however, so far as we know, no rigorous statistical evidence on gender differences in corrupt behavior. We present such evidence in this paper.[4]

We explore three data sets and present evidence that (a) in hypothetical situations women are less likely to condone corruption, (b) women managers are less involved in bribery, and (c) countries

1. For example, Fukuyama (1998, 24) reports that the percentages of American women who supported U.S. involvement in World War II, the Korean War, the Vietnam War, and the Gulf War, were 7 to 10 points less than the corresponding percentages for men. A study by the Center for American Women in Politics (Dodson and Carroll, 1991) documents substantial differences between men and women in their attitudes towards prohibition of abortion (79% women oppose versus 61% men), towards the death penalty (49% women oppose versus 33% men), and towards more nuclear plants (84% women oppose, compared to 71% men).
2. The adverse consequences of corruption have been dicussed by Klitgaard (1988), Knack and Keefer (1995), Mauro (1995 and 1998), and Olson, Sarna, and Swamy (1999).
3. Walsh (1985) reports that the Mexican city of Cuernavaca also chose to increase the number of women police officers with the expectation that they would be more honest than men. This initiative was apparently never implemented.
4. There is some anecdotal evidence. A study of politicians and civil servants in Mumbai, India (Honour, Barry, and Palnitkar, 1998, 195) concluded that "women's corruption was not as marked as men's…." Kaufman (1998) presents a scatterplot showing a correlation between corruption and an index of women's rights and emphasizes the need for more detailed investigation of this association.

which have greater representation of women in public life have lower levels of corruption. This evidence, taken together, provides some support for the idea that, at least in the short run, increased presence of women in public life will reduce levels of corruption.

Claims about gender differences can easily be misinterpreted. It is therefore important for us to clarify that we do not claim to have discovered some essential, permanent, or biologically-determined differences between men and women. Indeed, the gender differences we observe may be attributable to socialization, or to differences in access to networks of corruption, or in knowledge of how to engage in corrupt practices, or to other factors. We do not attempt to identify these underlying factors, but rather to document several statistically robust relationships that point towards a gender differential in the incidence of corruption. We offer no theory about the origin of this differential, and acknowledge that various alternative explanations are possible.

Our evidence is organized as follows. We first present data from the World Values Survey, in which men and women in a large number of developed and developing countries were asked a series of questions regarding their attitudes in hypothetical situations in which there was room for dishonest or opportunistic behavior. We show that men were more likely to choose options that are equivalent to the "defect" option in a prisoners' dilemma game. After showing gender differences in a range of attitudes, we present more detailed multivariate evidence on gender differentials in the attitude to bribery. We then present evidence of behavior in actual as opposed to hypothetical situations. Using a survey of enterprise owners and managers in the Central Asian republic of Georgia we show that officials in firms owned or managed by men are significantly more likely to be involved in bribe-giving.

One concern in the above analyses is that corruption is self-reported. Because of this, it is conceivable that our results reflect gender differentials in *acknowledgment* of corruption, rather than

in *incidence* of corruption. Data on corruption which are not self-reported are available only at the national level. Using corruption indices developed by Transparency International and Political Risk Services, we find that greater participation by women in market work and public life is associated with lower levels of corruption. This result is of value not only because national-level corruption data are not self-reported, but also because it shows that gender differentials have macro-level impacts. These findings are consistent with arguments that, at least in the short run, policies designed to increase the role of women in commerce and politics, commonly justified on grounds of gender equity and poverty alleviation, may also have an efficiency payoff, by lowering corruption.

II. Micro-Evidence: The World Values Surveys

The World Values Surveys are a set of surveys carried out in dozens of developed and developing countries in the early 1980s and the early 1990s. The purpose of these surveys was to collect information on the attitudes and values of the peoples of various societies around the world. An effort was made to ensure that in each case the sample was nationally representative.[5] We use data from 18 surveys in 1981 and 43 surveys in 1990-91.

In addition to hundreds of other items, these surveys inquire about the acceptability of various dishonest or illegal behaviors. For each behavior respondents are asked to place themselves on a 1-10 scale, where 1 indicates that the behavior can "never be justified" and 10 indicates it can "always be justified." For most items in most countries, the natural cut-off point is at the value 1, as a majority of respondents typically assert (fortunately) that the behavior can never be justified. Aggregating over all countries in the surveys, the gender gap consistently favors women, as shown in Table 1. For all 12 items listed, a significantly higher percentage of women than men believe that

5. Inglehart et. al. (1998) provide details on the procedures followed in the various surveys in the 1990s. The surveys in the Western countries were carried out by experienced survey organizations, many linked with the Gallup chain. In other countries they were carried out by academies of science, or by university-based institutes. Inglehart (p. 471) writes: "In most countries stratified multistage random sampling was used, with samples selected in two stages. First a random selection of sample locations was made ensuring that all types of location were represented in proportion to their population. Next, a random selection of individuals was drawn up."

the illegal or dishonest behavior is never justifiable. The gap ranges from more than 9 percentage points for driving under the influence to about 4 points for claiming government benefits for which one is ineligible. In all cases the gender differences are significant at the .0001 level.

The case of greatest interest to us is "someone accepting a bribe in the course of their duties": 27.6% of men but only 22.7% of women agree that this behavior is sometimes or always justifiable; this means men are twenty percent more likely to condone corruption than women, a substantial difference. However, this comparison of proportions could be misleading if men and women differed systematically in some other characteristic that also affects the attitude to bribery. In tables 2a , 2b, and 2c, we show that this result is robust to tests that control for other respondent characteristics. Our dependent variable takes the value 1 if the respondent says that bribery is "never justified," and zero otherwise. Our main interest is in the coefficient on the gender dummy (1 if male). There is some evidence that rule-breaking is higher among young people (Fukuyama, 1998), so we include age as a regressor. Marriage is often believed to alter public behavior; this is reflected, for instance, in lower rates of incarceration among married men, as compared to single men (Akerlof, 1998). To account for this, we include a dummy which takes the value 1 if the respondent is married. Commitment to a religion is often believed to affect behavior[6]; therefore, we include a dummy which takes the value 1 if the individual responded yes to the question "are you a religious person?" We also include another dummy which takes the value 1 if the respondent frequently attends religious services. Finally, the education dummy takes the value 1 if the respondent was schooled beyond age 16.[7]

In table 2a we pool the data across countries and estimate a logit model. In order to control for unobservable country characteristics that might otherwise bias our results, we include a dummy

6. This could be because, as argued by Strate et. al. (1989), "…Church attendance involves a sense of personal affiliation with an institution in which communal values and social obligations are regularly emphasized."
7. Inclusion of additional education dummies did not alter our central result regarding the gender differential. The data

for each country. The coefficient on the gender dummy (1 if male) is negative and is statistically significant at any reasonable level. The marginal effect corresponding to this coefficient is 3.9%, i.e., all else being equal, a man's likelihood of responding that accepting a bribe is "never justified" is 3.9 percentage points less than the likelihood for a woman. As expected, married people, older people, people who consider themselves religious, and those who regularly attend religious services are all more likely to say that bribery is never justified. The marginal effects are quite substantial, especially for being married[8] (2.4 percentage points), being a "religious person" (3.7 percentage points), and attending religious services regularly (4.3 percentage points).

It is possible that a large gender differential in a subset of countries is driving the results in table 2a. Therefore we ran the regressions separately for each country and found, in tables 2b and 2c, that the gender differential is observed in most countries, although the estimated effects vary widely across countries. We ran logit regressions for 43 countries for 1991 and 18 countries for 1981, using the same specification used in table 2a. In 1991 we see that in 36 of 43 countries the gender differential favors women; in 22 of these countries the differential is statistically significant at 5%. There are only 7 countries in which the gender differential favors men and only 2 of these differentials are statistically significant at 5%. In the data from 1981 (table 2c) the gender differential favors women in all 18 countries; the differential is statistically significant at 5% in 9 of these. Thus, the gender differential in the attitude to corruption seems to be a more or less worldwide phenomenon.

A possible response to these findings is that women may disapprove of corruption more only because they are less likely than men to be employed. Persons not employed may be less able to

---

do not allow us to construct a variable equal to years of education completed.

8. There is some evidence that marriage is particularly effective in reducing anti-social behavior of men (e.g., Akerlof, 1998). To test whether marriage has a different impact on men and women, we interacted the gender and marriage dummies. The interaction term was insignificant, i.e., we could not reject the null hypothesis that attitudes toward bribery are equally sensitive to marital status for men and women.

benefit from corruption,[9] or norms regarding bribery may be different among employed and non-employed persons (e.g. the latter may be more naïve or idealistic). Accordingly, we re-ran the regression in table 2a, including a dummy variable for the employment status of the individual. The employment dummy failed to enter significantly and the coefficient on the gender dummy was virtually unchanged, indicating that the gender differential in attitudes is not an artifact of male-female differences in employment rates.

The above analysis is based on attitudes regarding the acceptability of taking bribes. In the following section we present evidence of actual differences in involvement in bribery, drawing on an enterprise survey in Georgia.

III. Micro-Evidence: An Enterprise Survey in Georgia

In 1996 the President of the World Bank offered to support member countries' efforts to reduce corruption. Georgia was among the first to accept the offer. To this end, the World Bank developed a set of diagnostic surveys focusing on corruption in the public sector, targeted at households, enterprises, and public officials. We were fortunate to be given access to the data collected in these surveys, which were implemented in 1998. Only the enterprise survey allows disaggregation by gender; we analyze these data, focusing on differences between firms owned/managed by men and those owned/managed by women.

We have data on 350 firms covering four broad sectors: trade, manufacturing, services, and agriculture. We categorize them in three groups: large (more than 50 employees, 25% of our sample), medium (between 10 and 50 employees, 31%), and small (less than 10 employees, 44%). Firms in the capital were over-sampled, with 70% of the surveyed firms located in Tbilisi. The incidence of corruption is high, as firms reported paying an average of 233 lari per month in bribes, which is equivalent to 9% of average turnover (Anderson et al., 1999).

9. We thank Margaret Madajewicz for this point.

Managers were asked about contact with and illegal payments to 18 different agencies.[10] We stacked the data so we have 6300 observations (350 times 18) on potential contact and payment. We dropped observations where no contact was reported, leaving us with 2322 observations.[11] Table 3 shows the means of several relevant variables such as firm size, sector, and age and education of the manager, for the entire sample, and separately for men-owned/managed and women-owned/managed enterprises. It should be noted that these summary statistics are computed over observations, where each observation represents a contact between a firm and an agency.

Our analysis starts with the response to the following question: "How frequently do the officials providing the service require unofficial payments? Please answer on a scale of 1 to 7, where 1=Never, 2=1-20% of the time, 3=21-40% of the time, 4=41-60% of the time, 5=61-80% of the time, 6=81-99% of the time, and 7= Always." Table 3 shows that, on average, firms owned/managed by women give bribes on approximately 5% of the occasions that they come in contact with a government agency. The percentage is twice as large for firms owned/managed by men.[12] Thus, the descriptive evidence is strongly suggestive of a gender differential in involvement in bribery.

How should this evidence be interpreted? The way the question (which is usually addressed to the firm's owner/manager) is phrased, it appears that the impetus for the bribe is coming from the official, not from the owner/manager. However, questions on bribery are usually put in this way to avoid placing the onus of the bribe on the respondent, in the hope of eliciting an honest response. Therefore, an obvious interpretation of these results is that female owners/managers are less likely to offer bribes than male owners/managers. However, other interpretations are possible. It could be that women are less likely to belong to bribe-sharing "old boy" networks, and hence may be less

10. The full list of contact agencies is as follows: phone installation, enterprise registration, water, electricity, inspection of weights and measurements, fire inspection, sanitary inspection, tax and finance inspection, tax clearance (for example in government privatization), other clearance to participate in government procurement, export license or permit, import license or permit, customs at border crossing, registration of property-ownership, lease of state-owned commercial real estate, state banking services, building permits, and road police.
11. The probability of contact did not vary with gender.

prone to be asked for bribes. It could also be that, due to less individual or collective experience in the labor force, women have not yet "learned" how to engage in corruption. Here we document the presence of a statistically robust gender differential, but do not attempt to distinguish among these alternative interpretations.

Table 4 examines whether this gender differential remains after we control for other firm characteristics.[13] We estimate three models, each of which has a different dependent variable. Given there are seven categorical outcomes which can be meaningfully ranked, one possibility is to estimate an ordered probit model. The dependent variable here takes values 1 through 7, with 1 being the category "never." However, if we are only interested in the distinction between firms which never give bribes and those who sometimes do, a probit model is appropriate. Here the dependent variable takes the value 0 if the firm never gives a bribe, and 1 if it sometimes does. Finally, we present OLS estimates, assigning to each firm (for each point of contact) a bribe-giving percentage equal to the mid-point of its category[14] and using this percentage as the dependent variable. Thus, the dependent variable now takes the values 0%, 10%, etc. Though OLS is not quite appropriate, given the discontinuous nature of this dependent variable, it serves as a useful point of comparison. In all three sets of estimates the standard errors are corrected for (potential) within-firm autocorrelation in the error terms.

We have relied on the literature on Georgia, and on corruption more broadly, to guide our choice of control variables. Since a firm's size can affect its ability to pay, as well as its bargaining power or "connections," we include size dummies (small and medium, with large being the excluded category). Depending on the sector in which the firm operates, its dependence on governmental services, and hence its temptation to bribe, may vary; therefore, we have included sector dummies

12. A firm in the range 21-40% was assigned the value 30%, and so on.
13. In the regression analysis we use the subset of the data which we expect is most reliable, where the respondent was the owner/senior manager. Using the full sample yields similar results.

(manufacturing, services, and trade, with agriculture being the excluded category). We also include dummies for the level of education of the owner/manager; these could partially reflect influence or connections as, for example, in "old boy networks." The dummies are for university and post-university, with the excluded category being those who do not have a university education.

Since some governmental agencies are likely to be more corrupt than others, we include dummies for the agency with which the firm is having contact. Because these dummies are so numerous (18 agencies, hence 17 dummies) these coefficients are not reported. Participation by the state and foreign participation could also affect bribe-giving,[15] and dummies are included for these.

Column 1 of table 4 presents ordered probit estimates. The positive coefficient on the gender dummy indicates that, all else being equal, a firm owned/managed by a man is likely to be in a higher category than a firm owned/managed by a woman; the coefficient is statistically significant at well below 1%. However, we need a more precise interpretation. The model can be used to obtain predictions of the probability that the firm is in each of the seven categories (never, 1-10%, etc.). The bulk of the outcomes (83%) fall in the "never" category and no other category has more than 5% of the observations. Hence the transition of greatest interest is from the "never" category to any other. Therefore, a natural way in which to use the ordered probit estimates is to compute the effect of a unit increase in the explanatory variable on the probability that the firm is in any one of the six categories besides "never." We see in column 2 that the presence of a male owner-manager increases by 13.7 percentage points the probability that the firm is in a category other than "never." This is a huge effect, given that 83% of outcomes are in the "never" category. Firm size also has a substantial impact: compared to a large firm, the probability that a medium or small-sized firm falls outside the "never" category increases by 15.6 and 26.9 percentage points respectively.

---

14. See footnote 12.
15. State-ownership should reduce bribe-giving if this gives the firm better contacts within the government. Miller et al. (1999) report that in formerly communist countries officials treat other officials better than they do private citizens.

Column 3 presents probit estimates; as mentioned above, the dependent variable takes the value 0 if the firm is in the "never" category and 1 otherwise. Again, the male dummy has a positive coefficient which suggests that, all else being equal, a firm owned/managed by a man is less likely to be in the "never" category than a firm owned/managed by a woman. Column 4 presents marginal effects, i.e., the effect of a unit increase in the explanatory variable on the probability that the firm is not in the "never" category. We see that the marginal effect of a male owner/manager is 13.4 percentage points. This effect is reassuringly close to our 13.7 percentage point estimate from the ordered probit model.

The OLS estimates in column 5 have a different interpretation. Each coefficient now shows the impact of a unit increase in the explanatory variable on the probability that a firm gives a bribe. The results indicate that, all else being equal, the presence of a male owner-manager increases the incidence of bribe-giving by 10.4 percentage points. Thus, all three models estimated clearly indicate a higher involvement in bribery among male owner-managers.

We also investigated whether there were gender differences in the amounts, as well as frequency, of payments and found that conditional on a bribe having been paid, there is no significant gender differential in the amount. This result is consistent with other findings from the Georgian data which suggest that bribe markets in Georgia operate at known prices and agents essentially have discretion only over whether or not to pay (Anderson et al., 1999).

Having seen evidence from micro-data based surveys, in the next section we turn our attention to analysis of country-level data. These cross-country analyses complement the micro-level evidence in two important ways. First, as earlier mentioned, national-level corruption ratings are not self-reported, so that any gender differentials cannot be produced by male-female differences in the willingness to acknowledge corruption. Second, micro-level evidence carries no necessary

---

Foreign ownership may act to increase bribe-giving, since foreign-owned firms may be perceived to be richer, and more

implications for the macro-level relationship between women's participation and the severity of corruption in public life. For example, male-female differences in attitudes and behavior may be too small for an increase in women's participation in commerce and government to move society from a highly corrupt to a less corrupt equilibrium. Or, women may have little influence on the way public life is conducted, even when their participation rates rise, as long as they remain in the minority.

IV. Macro-Evidence: Cross-Country Data

Our first concern is measurement. In the analysis above, where we are looking at bribery by individual firms, we focused on the gender of the owner/manager. What is the appropriate index of women's involvement when we are looking at a country as a whole? A reasonable measure of the power wielded by women in public life is the percentage of legislators in the national parliament that is female.[16] This variable has the advantage of being easy to construct, and errors in measurement are unlikely. We supplement this variable with a broader measure of women's participation in public life, the percentage of the labor force comprised by women.[17]

Perhaps the most widely used index of corruption at present is the "Corruption Perceptions Index" (TI98), constructed by Transparency International. The TI98 index combines the information available in a large number of surveys conducted by the following organizations: Economist Intelligence Unit, Gallup International, the Political and Economic Risk Consultancy, Political Risk Services, the World Bank, and the World Economic Forum. This index can in principle vary between 0 and 10, which would be the score for a corruption-free country.[18] The mean is 4.9, the minimum is 1.4 (Cameroon), and the maximum is 10 (Denmark). As an alternative corruption indicator with data for a larger number of countries, we use the "corruption in government" index for 1995 from the *International Country Risk Guide* (ICRG), introduced by Knack and Keefer (1995).

---

able to pay.

16. This variable is also being used by Roberta Gatti and her collaborators at the World Bank to look at a similar issue.

17. See Table 5 for data sources and summary statistics for variables used in the cross-country tests.

This index can in principle vary between 0 and 6, with higher values representing less corruption. For 1995 the mean is 3.72, the minimum is 1 (Sierra Leone), and the maximum is 6 (several countries, including Switzerland and Sweden). By incorporating judgements of several independent sources, the TI index is presumably less subject to measurement error than the ICRG index. The broader country coverage of ICRG, however, permits the inclusion of a larger and more diverse set of countries—particularly small and poor nations—improving the generalizability of our findings.

Although our main interest is the relationship between the level of corruption and women's participation, we need to control for other potential determinants of corruption. Because the development of institutions to restrain corruption may be a costly long-term process undertaken more easily by richer countries, we control for (the log of) per capita income. To the extent that formulation, implementation, and public knowledge of written codes and laws reduce corruption, a more educated population may be less tolerant of corruption. Therefore, we control for the average years of education completed by adults. If there are economies or diseconomies of scale in institutional development, the size of the country can affect the level of corruption. To reflect this we include log of the country's population as a regressor.

We also control for the presence of institutions that may restrain corruption. By increasing the threat of exposure, an independent media can increase the costs of corrupt behavior. Independent judiciaries may reduce the incidence of corruption, at least within the executive branch. Finally, multi-party competition may reduce corruption because each party has the incentive to expose the others' wrongdoing.[19] We measure these corruption-restraining institutions using several 4-point indexes constructed from Humana (1991). One of these indexes evaluates the independence of the courts, while another evaluates the degree of multiparty competition in elections. For an overall measure of media independence, we take the average of the following three separate indexes:

18. Details of the method of construction are provided by Lambsdorff (1998).

censorship of the press, independence of newspapers, and independence of TV and Radio. Because the media independence, judiciary independence and multiparty competition indexes are highly correlated, including all of them in our regressions would reduce the precision of our estimates. Therefore, we have constructed an overall index of "Corruption-Restraining Institutions" by averaging the three indexes.

Ethnically diverse societies may be more fractionalized, and officials may have less (or more) compunctions about demanding a bribe from someone of a different ethnicity; therefore, we include the percentage of population belonging to the largest ethnic group as a regressor. This percentage varies between 17 (Zaire and Uganda) and 100 (Korea, Iceland, and Malta). It is also possible that social cohesion may be lower and hence corruption may be higher in countries where inequality is high; to account for this possibility we include the Gini coefficient for income distribution. The most unequal countries in our data are Sierra Leone (62.3%) and Brazil (60.1%) and the most equal countries are Austria (23.1%) and Denmark (24.7%).

We include several variables to reflect other characteristics of the government. It is often argued that corruption is high when officials are badly paid (Haque and Sahay, 1996). Therefore, we include the average government wage as a multiple of per capita GDP.[20] The mean value is close to three, with considerable variation across countries. Corruption may also be linked to the history of colonialism. On the one hand some colonial administrations are alleged to have been relatively honest; an example is the Indian Civil Service, which was supposedly part of the "steel frame" that held up the British administration in colonial India. On the other hand, if colonial administrations were authoritarian and distant from local populations, and if the bureaucracies of newly independent states inherited this culture, ex-colonies may have higher levels of corruption. We include a dummy which takes the value 1 if the country has never been a colony. It has also been argued that the

19. For a discussion of this and related issues see Shleifer and Vishny (1998).

character of British colonialism was different from others, so we include a dummy (1 if former British colony) to allow for this possibility.[21]

Estimates from the cross-country tests are presented in tables 6a and 6b, where the dependent variables are TI98 and ICRG95, respectively. In the first four regressions in each table our measure of women's participation is the percentage of the lower house of the national parliament that is female; in the second four regressions we use the percentage of the labor force that is female.

In the first four columns of table 6a we see that a higher percentage of women in parliament is strongly associated with higher values of TI98 (i.e., lower levels of corruption). In all four cases the coefficient is clearly statistically significant at any reasonable level. The smallest of these coefficients, 0.071, can be interpreted as follows: a one standard deviation increase in the percentage of the lower house of parliament that is women (8.8) is associated with an increase of about 0.6 in TI98. This is a substantial effect, given the mean of TI98 is 4.9.

In the fifth column our measure of women's participation is the percentage of the labor force that is women. A percentage point increase in this variable is associated with an increase in TI98 of 0.047, and a standard deviation increase is associated with an increase in TI98 of 0.36. The coefficient on women's labor force share declines in column 6 when we add controls for colonial heritage and ethnic uniformity, but is still significant at 10%. In the last two columns the magnitude of the coefficient remains roughly the same as in column 6, but is no longer statistically significant. This is a consequence of the fact that the sample size has declined due to limited data availability on the additional control variables, rather than due to the influence of the new control variables themselves.[22]

---

20. These data were assembled for the early 1990s by Schiavo-Campo et al. (1997).
21. Treisman (1998) finds that ex-British colonies are rated as less corrupt.
22. Retaining the samples used in columns 7 and 8 but using the specification of column 6, women's labor force share is insignificant. Thus the change in results for women's labor force share from column 6 to columns 7 and 8 is attributable to the change in sample and not to the change in specification.

Overall, table 6a provides strong evidence that women's presence in parliament is negatively correlated with corruption. Women's labor force share shows a similar negative correlation with corruption, although the results are more sensitive to changes in the sample necessitated by limited data availability on some control variables.

Table 6a contains three other significant results. Richer countries have lower levels of corruption; roughly speaking, a 1% increase in per capita GNP is associated with an increase of 0.015-0.020 in TI98. Larger countries score more poorly, as a doubling of population is associated with a decline of approximately 0.1-0.3 in TI98. Former British colonies have markedly higher values of TI98, as in Treisman (1998), with the effect varying from 1.0-2.2.

Table 6b repeats the analysis with the alternative dependent variable, ICRG95. As in table 6a a higher women's share in parliament is associated with lower levels of corruption (higher values of ICRG95); the coefficient is highly significant in columns 1-4. The smallest value, 0.048, can be interpreted as follows: a one standard deviation increase in women's share in parliament is associated with an increase of 0.42 in the ICRG index, which is more than 10% of its mean value (3.72). The coefficient in column 5 implies that a standard deviation increase in women's labor force share is associated with an increase of 0.24 in ICRG95. As in table 6a, our regressions show that women's share of the labor force is negatively correlated with corruption as hypothesized, but the results are more sensitive to sample changes than results obtained using women in parliament as our measure of women's participation.

The other variables that invariably entered significantly in table 6a--per capita income, population, and the British colony dummy--enter significantly in some but not all regressions in table 6b. Government wages are significant in column 3 (with women in parliament as the women's participation variable) but not in column 7 (where share in the labor force is the women's participation variable). Income inequality is significant in column 8 (with women's labor force

share) but not in column 4 (with women's share in parliament). Schooling, with a consistently positive but insignificant coefficient in table 6a, is a significant determinant of corruption in most specifications in table 6b. However, because our samples are restricted by the availability of data on the women's participation variables, we are reluctant to draw strong inferences from these findings on schooling, government wages, and inequality, which we treat as control variables. A thorough investigation of hypotheses regarding these other determinants of corruption is beyond the scope of this study.

V. Robustness of Cross-Country Findings

The findings presented in tables 6a and 6b are robust to using several alternative methodologies which are discussed below. The statistical results discussed in this section are not presented in tables in the interest of brevity, but are available on request from the authors.

1. *Ordinal Versus Cardinal Measures*: Strictly speaking, the TI and ICRG corruption indexes could both be viewed as ordinal and not interval scales. However, women's participation variables continue to be statistically significant if we estimate ordered logit models, rather than the OLS models reported in tables 6a and 6b.[23]

2. *Other Corruption Measures*: We used the recent "graft" index developed by Kauffman et al. (1999) at the World Bank as our dependent variable, and obtained similar results. The Kauffman et al. index is constructed using many of the same sources as TI, but a somewhat different methodology. It is correlated with the TI index at .98, but covers many more countries.

3. *Outliers and Data Quality*: Results change very little when we run median regressions or robust regressions, indicating that they are not driven by a small number of outlying observations. We also ran weighted least squares for the TI98 regressions, with the weight proportional to the number of surveys used (which varies from 3 to 12) in constructing each TI value. This procedure, which

23. In an ordered logit model estimated using the ICRG data (say) the six values of the dependent variable (1 through 6)

reduces the possibility that the results are driven by a few countries with poor-quality data on corruption, yields coefficient estimates for the women's participation variables very similar to those produced by OLS.

4. *Omitted Variables*: Findings on the relationship between corruption and women's participation are also robust to the inclusion of additional control variables. We added a set of continent dummies (Africa, Latin America, East Asia, and OECD, with the rest of the world as the omitted category), to account for any omitted variables related to corruption or women's participation rates (or the ways in which they are measured) that vary primarily across continents or country groupings. For example, it is conceivable that the low corruption, high women's participation countries are all developed countries, and that corruption and women's participation are unrelated within the group of developed countries, or within the group of developing countries. However, the inclusion of the OECD and continent dummies has little effect on the women's participation results. Similarly, adding the agricultural share of the labor force as a regressor does not affect any of our findings**.** We also found that controlling for trade openness and the black market foreign exchange premium did not meaningfully affect our main findings.[24]

It could be that more corrupt countries also discriminate more against women, which leads to lower levels of participation by them. In this scenario the observed correlation between women's participation and corruption is spurious, and driven by the omitted variable "level of discrimination against women." We evaluated (and ruled out) this possibility by controlling for the level of gender discrimination using four alternative measures: the gap between men's and women's educational attainment, the gap between men's and women's life expectancy, and Humana's (1991) measures of "political and legal equality" and "social and economic equality" between men and women.

---

are treated as six ordered categories.

24. Foreign exchange and trade restrictions can encourage corruption through the creation of rents controlled by public officials.

Inclusion of these controls changes the women's participation estimates only trivially, with coefficients rising (showing a larger decrease in corruption for a given increase in women's participation) more often than falling.

5. *Simultaneity Bias*: A common problem in cross-sectional analyses, especially when using macro-data, is simultaneity bias. In our context the question is, could it be that the observed correlation between women's participation and corruption reflects the impact of corruption on women's participation? The usual econometric solution to this problem, instrumental variable estimation, is not practical for us because of the small sample sizes and difficulty of finding valid instruments for women's participation. However, when we consider the specific channels through which corruption can affect women's participation we see that simultaneity bias cannot account for our results.

Suppose corruption is modeled as a tax on labor supply, as revenues diverted to bureaucrats reduce the return to private sector entrepreneurs and workers. Like other taxes, corruption could reduce women's share in the labor force, as it is well known that women's labor supply is more elastic than men's. However, such a model cannot explain the relation between corruption and women's share in parliament. Nor does it provide an explanation for the micro-level gender differences in attitudes and behavior presented in sections II and III.

It could also be argued that high corruption countries have fewer working women because women choose not to work in the face of high levels of corruption. Suppose that for people who are averse to corruption, participation in a corrupt system is like a "psychic tax." As societies become more corrupt, the burden of this psychic tax increases for corruption-averse people, but not for others. Since, on average, women are more corruption-averse than men (as shown above), more of them will drop out of the labor force, in the more corrupt societies.

Though this argument is logical, its fundamental premise, that women's attitudes to corruption affect their likelihood of entering the labor force, is not consistent with findings we

obtained on employment status from the World Values Survey data. We estimated a logit model using the data for women; the dependent variable was assigned the value 1 if she was employed and zero otherwise. We found that the attitude to corruption did not enter significantly in this model, despite a sample size of about 40,000.[25] The simultaneity argument implies that the employment and attitudes toward corruption relationship will be stronger where corruption is more severe, but no significant relationship is found even when we restrict the sample to World Values Survey respondents who live in high-corruption countries (as indicated by TI or ICRG scores). Thus the data do not support the hypothesis that lower participation by women in high-corruption countries is because of their greater aversion to corruption.

VI. Summary and Concluding Remarks

The results presented in this paper reveal a strong empirical regularity. We first showed, using data from a large number of countries, that in hypothetical situations women are more likely than men to disapprove of the practice of accepting bribes. We then found, using data from Georgia, that firms owned or managed by women are less likely to be involved in bribe-giving. Finally, our analysis of country-level data indicated that higher levels of women's participation in public life are associated with lower levels of corruption.

The World Values Survey results can be criticized on the grounds that they represent hypothetical choices, and the data on corruption from Georgia can be questioned because they are self-reported. However, these criticisms cannot be leveled at our cross-country analyses: the ICRG index was constructed by external observers, and Transparency International's index of corruption was constructed using a "survey of surveys," many of which involved external observers (and none of which involved an observer's evaluation of his or her own personal behavior).

25. The corruption variable constructed from the World Values Survey data is described in section II. The other explanatory variables included were marital status, age, age squared, education, and the presence of children in the home (all of which are highly significant), and fixed country effects (which are jointly significant).

The results from Georgia, wherein firms owned or managed by women report lower levels of bribe-giving, could, in principle, follow from the way women are selected into the labor force. If employers discriminate against women, only those women who are exceptionally capable or honest may become owners/managers, and the gender differential we are observing may be the difference between average men and exceptional women. Arguing along similar lines, a greater presence of women in the labor force could improve average outcomes because labor force participation rates for women are still low, and the women entering the labor force are from the "better" part of the women's distribution, rather than because the distribution of attitudes to corruption differs between men and women. However, if indeed women are performing better because we are still in the better part of the women's distribution, this only strengthens the case for increasing their representation. It should also be noted that we found with the World Values Survey data, that in the entire sample of men (employed and not employed) the percentage who say bribery is never justified is lower than in the entire sample of women. This differential cannot be explained by appealing to a selection argument. Furthermore, our cross-country findings are unaffected by taking discrimination into account.

Although some objection can be raised to each of our diverse pieces of evidence, we maintain that the most parsimonious interpretation is that gender-based differences in corrupt behavior exist and that increasing women's presence in public life can reduce levels of corruption, at least in the short run. We are agnostic regarding whether these differences are attributable to socialization, biology, access to networks of corruption, knowledge of corrupt practices, or other factors, and whether they are temporary or permanent. Overall, our findings provide some support for the view that policies to increase the role of women in politics and commerce–usually proposed with gender-equity or poverty-alleviation goals in mind-can be useful tools in combating corruption.

References

Akerlof, G. 1998. "Men without Children." *Economic Journal* 108: 287-309.

Anderson, James; Azfar, Omar; Kaufmann, Daniel; Lee, Young; Mukherjee, Amitabha and Ryterman, Randi. 1999. "Corruption in Georgia: Survey Evidence." Mimeo, The World Bank.

Bardhan, Pranab. 1997. "Corruption and Development: A Review of the Issues." *Journal of Economic Literature*, pp.1320-46.

Boycko, Maxim; Shleifer, Andrei and Vishny, Robert. 1996 "A Theory of Privatization." *Economic Journal*, March, pp. 309-319.

Bureau of Justice Statistics. 1996. *Sourcebook of Criminal Statistics*.

Dodson, D.L. and Carroll, S.J. 1991. *Reshaping the Agenda: Women in State Legislatures*. Center for American Women and Politics: New Brunswick: Rutgers University Press.

Eckel, Catherine and Grossman, Philip. 1998. "Are Women Less Selfish than Men? Evidence from Dictator Experiments." *Economic Journal*, May, pp. 726-735.

Fukuyama, Francis. 1998. "Women and the Evolution of World Politics." *Foreign Affairs*, 77, 5: 24-40.

Haque, Nadeem U. and Sahay, Ratna. 1996. "Do Government Wage Cuts Close Budget Deficits? Costs of Corruption." *IMF Staff Papers*, 43, 4: 754-778.

The Hindu. 1999. "Government firm on Quota for Women." March 9, 1999.

Humana, Charles. 1996. *World Human Rights Guide* (Third ed.). New York: Oxford University Press.

_____. 1992. *World Human Rights Guide*. (Second ed.) New York: Oxford University Press.

Honour, Trudie; Barry, Jim and Palnitkar, Sneha. 1998. "Gender and Public Service: a Case Study of Mumbai." *International Journal of Public Sector Management*, 11, 2/3: 88-200.

Inglehart, Ronald; Basanez, Miguel and Moreno, Acosta. 1998. *Human values and beliefs: a cross-cultural sourcebook : political, religious, sexual, and economic norms in 43 societies : findings from the 1990-1993 world values survey*. Ann Arbor: University of Michigan Press.

Kaufman, D. 1997. "Corruption: The Facts." *Foreign Policy*, Summer: 114-131.

_____. 1998. "Challenges in the Next Stage of Corruption," in *New Perspectives in Combating Corruption*. Washington, D.C: Transparency International and the World Bank.

Kaufman, D., Kraay, A., and Ziodo-Libotan, P. 1999. "Aggregating Governance Indicators." Mimeo, World Bank.

Klitgaard, Robert. 1988. *Controlling Corruption*. Berkeley: University of California Press.

Knack, Stephen and Keefer, Philip. 1995. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics*, 7: 207-27.

Lambsdorff, J.G**.** 1998. Corruption Perceptions Index: Framework Document, http://www.transparency.de/documents/cpi/framework.html.

Mauro, Paolo. 1995. Corruption and Growth. *Quarterly Journal of Economics* 110: 681-712.

Mauro, Paolo. 1998. "Corruption and the Composition of Public Expenditure." *Journal of Public Economics*, 69, 263-79.

McDermott, Jeremy. 1999. "International: Women Police Ride in on a Ticket of Honesty." *The Daily Telegraph*, London, July 31, 1999.

Miller, William; Grodeland, Ase and Koshechkina, Tatyana. 1998. "Are people victims or accomplices? The use of presents and bribes to influence officials in Eastern Europe." *Crime, Law and Social Change*, 29: 273-310.

_____. 1999. "Caught between State and Citizen: The View from Behind the Official's Desk." Paper prepared for the *NISP Acee 7th annual conference*, Sofia, March 25-27.

Moore, Molly. 1999. "Mexico City's Stop Sign to Bribery; To Halt Corruption, Women Traffic Cops Replace Men." *The Washington Post*, July 31, 1999.

Olson, Mancur; Sarna, Naveen and Swamy, Anand. 1999. "Governance and Growth: A Simple Hypothesis Explaining Cross-country Differences in Productivity Growth." Forthcoming, *Public Choice*.

Schiavo-Campo, Salvatore, Guilio de Tommaso and Amitabha Mukherjee. 1997. "An International Statistical Survey of Government Employment and Wages." PRWP 1806, The World Bank.

Shleifer, Andrei and Vishny, Robert. 1998. *The Grabbing Hand: Government Pathologies and their Cures*. Cambridge: Harvard University Press.

Strate, John M., Parrish, Charles J., Elder, Charles D., and Coit Ford III. 1989. "Life Span Civic Development and Voting Participation." *American Political Science Review*, 83, 2: 443-64.

Sullivan, Michael J. 1991. *Measuring Global Values*. New York: Greenwood Press.

Treisman, Daniel. 1998. "The Causes of Corruption: A Cross-National Study." Mimeo, Department of Political Science, University of California at Los Angeles.

United Nations Publications. 1994. *Women's Indicators and Statistics Database (WISTAT).* Version 3, CD-ROM. New York: United Nations.

Walsh, Mary Williams. 1985. A Mexican City is Set for Revolution: Lady Traffic Cops--Cuernavaca Believes Women are Far Less Corruptible Than Bribe-Hungry Men." *Wall Street Journal*, June 17, p. 1.

Table 1.

Gender and Socially Cooperative Attitudes
World Values Surveys

	% saying the behavior "can never be justified"	
	Male	Female
1) Claiming government benefits which you are not entitled to	63.7	67.9
2) Avoiding a fare on public transport	60.3	64.9
3) Cheating on taxes if you have the chance	54.4	61.5
4) Buying something you knew was stolen	72.9	79.5
5) Taking and driving away a car belonging to someone else	83.1	87.2
6) Keeping money that you have found	43.9	51.6
7) Lying in your own interest	45.1	50.9
8) Someone accepting a bribe in the course of their duties	72.4	77.3
9) Fighting with the police	52.0	57.1
10) Failing to report damage you've done accidentally to a parked vehicle	61.8	67.6
11) Throwing away litter in a public place	69.1	74.4
12) Driving under the influence of alcohol	74.2	83.4

* Sample sizes vary between 52,107 and 83,532. All differences are significant at the .0001 level.

Table 2a . Logit regression, World Values Survey data
Dependent variable = 1 if bribery is "never justified", = 0 otherwise
(standard error in parentheses)

	Coefficient	Marginal Effect in percent
Male = 1	-0.220*	-3.9
	(0.018)	
attended school until age 16 or more	-0.010	-0.2
	(0.021)	
married = 1	0.137*	2.4
	(0.021)	
attends religious services regularly	0.120*	4.3
	(0.024)	
"religious person"	0.205*	3.7
	(0.019)	
Age in years	0.041*	1.0
	(0.003)	
Age Squared	-0.0002*	-0.0
	(0.00003)	
N	77,314	

Note: * = Significant at 5%. Dummies were included for each country. Marginal effects were computed at the sample means.

Table 2b. Country-wise Logit regression, World Values Survey data, 1990-1991
Dependent variable = 1 if bribery is "never justified", = 0 otherwise
(standard error in parentheses)

Country	No. of Observations	Male β	Standard error	Marg. Eff (%)
Latvia	890	-0.6227*	0.1675	-9.9
Sweden	1040	-0.6394*	0.1467	-9.8
Estonia	999	-0.5299*	0.1449	-9.5
Netherlands	1002	-0.5007*	0.1444	-9.4
Bulgaria	1015	-0.5949*	0.1642	-8.9
Mexico	1497	-0.3180*	0.1079	-7.9
Japan	977	-0.3280*	0.1455	-7.6
France	983	-0.3315*	0.1396	-7.6
Switzerland	1357	-0.4932*	0.1462	-7.0
S. Africa	2676	-0.4151*	0.0982	-6.9
Russia	1909	-0.5107*	0.1364	-6.4
W. Germany	2049	-0.2969*	0.0951	-6.2
Canada	1704	-0.3621*	0.1185	-6.1
Denmark	1020	-0.7553*	0.2391	-5.7
Iceland	696	-0.4310*	0.2195	-5.6
Belgium	2671	-0.2146*	0.0817	-5.0
E. Germany	1329	-0.2316	0.1183	-4.8
Ireland	996	-0.3815*	0.1867	-4.8
N. Ireland	303	-0.2651	0.3443	-4.4
Britain	1478	-0.1992	0.1266	-4.1
Brazil	1761	-0.3288*	0.1499	-3.3
Norway	1226	-0.2377	0.1497	-3.3
Finland	580	-0.1717	0.1927	-3.1
China	995	-0.2581	0.1963	-3.0
Hungary	979	-0.1270	0.1379	-2.9
Argentina	986	-0.6029*	0.3037	-2.8
Spain	4048	-0.1597*	0.0804	-2.8
Portugal	1148	-0.0952	0.1395	-2.7
Turkey	1017	-0.3424	0.2690	-2.5
Chile	1478	-0.1191	0.1479	-2.4
Czechoslovakia	1396	-0.0770	0.1109	-1.8
Poland	931	-0.1116	0.1782	-1.7
USA	1821	-0.0049	0.1219	-1.5
Slovenia	1003	-0.7230*	0.1689	-1.4
Moscow	995	-0.1340	0.1499	-1.3
Austria	1445	-0.4124*	0.1221	-0.8
Italy	2014	0.0050	0.1084	0.1
Lithuania	978	0.0600	0.1389	1.3
India	2476	0.1028	0.1171	1.3
Nigeria	991	0.0692	0.1413	1.6
S. Korea	1246	0.1793	0.1598	2.4
Belarus	997	0.3223*	0.1490	6.6
Romania	1088	0.3542*	0.1373	7.7

* = Significant at 5%.

Table 2c. Country-wise Logit regression, World Values Survey data, 1981
Dependent variable = 1 if bribery is "never justified", = 0 otherwise
(standard error in parentheses)

Country	No. of Observations	Male β	Standard error	Marg. Eff. (%)
Netherlands	1175	-0.5626*	0.1278	-11.9
Belgium	1053	-0.4902*	0.1314	-9.7
Japan	1077	-0.4488*	0.1347	-8.6
France	1161	-0.3697*	0.1255	-8.3
Sweden	938	-0.4384*	0.1550	-7.1
Iceland	917	-0.5886*	0.1882	-6.5
Argentina	879	-0.3575*	0.1812	-4.7
Denmark	1175	-0.6837*	0.2332	-3.7
N. Ireland	310	-0.4144	0.3857	-3.4
Norway	1228	-0.2748	0.1577	-3.4
Spain	2206	-0.2121*	0.1076	-3.3
Britain	1208	-0.2040	0.1444	-2.6
Italy	1305	-0.1251	0.1242	-2.6
W. Germany	1303	-0.1064	0.1188	-2.3
USA	2278	-0.0926	0.1080	-1.5
Australia	1209	-0.0831	0.1442	-1.3
Canada	1243	-0.0919	0.1406	-1.3
Ireland	1173	-0.0162	0.1524	-0.5

* = Significant at 5%.

Table 3. Means and Standard Deviations, Georgia Survey, Stacked Data (N=2322)

	Unit	Whole sample (n=2322)	Male Owner/Senior manager (n=1934)	Female Owner/Senior manager (n=388)
Frequency of bribes	percent	10.14	11.16	5.05
		(26.44)	(27.61)	(18.81)
Amount of bribes	lari	15.41	18.19	1.52
		(382.35; n=2262)	(418.80; n=1885)	(6.79; n=377)
Size of firms - Small	proportion	0.39	0.34	0.63
		(0.49)	(0.47)	(0.48)
- Medium	proportion	0.35	0.36	0.26
		(0.48)	(0.48)	(0.44)
- Large	proportion	0.27	0.30	0.10
		(0.44)	(0.46)	(0.30)
Majority state ownership	proportion	0.09	0.10	0.05
		(0.29)	(0.30)	(0.21)
Foreign participation	proportion	0.47	0.51	0.24
		(0.50)	(0.50)	(0.43)
Sector - Trade	proportion	0.51	0.48	0.67
		(0.50)	(0.50)	(0.47)
- Manufacturing	proportion	0.25	0.29	0.09
		(0.44)	(0.45)	(0.29)
- Services	proportion	0.48	0.49	0.42
		(0.50)	(0.50)	(0.49)
Edu of senior manager – Univ.	proportion	0.85	0.85	0.83
		(0.36)	(0.35)	(0.38)
- post university	proportion	0.08	0.09	0.04
		(0.28)	(0.29)	(0.20)

Note: The proportions in various sectors add up to more than 100% because some firms are in more than one sector (say, Trade and Manufacturing).

Table 4. Georgian Enterprises, Patterns of Bribe Paying

Type of procedure	(1) Ordered Probit	(2) Ord.Probit Marginal effect (%)	(3) Probit	(4) Probit Margin-al effect (%)	(5) OLS
Male owner / senior manager	0.673**	13.7	0.659**	13.38	10.363**
	(0.171)		(0.186)		(2.458)
Size of firms – Small	1.073**	26.9	1.194**	29.77	12.384**
(reference group = Large)	(0.301)		(0.328)		(3.708)
- Medium	0.578**	15.57	0.677**	18.37	4.180
	(0.282)		(0.309)		(2.631)
Majority state ownership	-0.547*	-10.66	-0.577*	-11.0	-5.902**
	(0.316)		(0.34)		(2.849)
Foreign participation	0.084	2.09	0.098	2.43	0.085
	(0.177)		(0.178)		(3.174)
Sector - Trade	-0.041	-1.01	-0.029	-0.72	-0.08
(reference group = Agriculture)	(0.164)		(0.186)		(3.044)
- Manufacturing	0.109	2.76	0.303	7.98	-1.374
	(0.194)		(0.224)		(2.884)
- Services	0.156	3.88	0.215	5.35	1.929
	(0.171)		(0.185)		(3.339)
Edu of senior manager – Univ.	-0.162	-4.20	-0.266	-7.06	-2.848
(reference group = below Univ.)	(0.201)		(0.237)		(3.612)
- post university	0.100	2.57	0.032	0.81	1.518
	(0.343)		(0.394)		(6.914)
constant			-2.760**		-10.903**
			(0.533)		(6.625)
No of observations	2219		2219		2219
Adjusted/Pseudo R square	0.087		0.14		0.118

Notes: (1) Dummies were included for agency with which firm was in contact.
(2) Standard errors have been corrected for within-firm autocorrelation of error terms.
(3) We used data only for firms where the owner/senior manager was the respondent.
(4) Marginal effects were computed at the sample means.
**Significant at the 5% level, *Significant at the 10% level.

Table 5. Summary Statistics and Data Sources for Cross-country Regressions

Variable	Year	Source	Unit	Mean (std. deviations)	N
TI98 Corruption Index	1998	Transparency International	1=worst 10=best	4.99 (2.44)	79
ICRG Corruption Index	1995	Political Risk Services	1= worst 6 = best	3.72 (1.24)	90
Percent of labor force that is women	1990	WISTAT	Percent	36.33 (7.70)	69
Percent of women legislators in lower chamber	1991	WISTAT	percent	10.78 (8.76)	63
GNP Per Capita	1996	World Bank	US dollars	7662 (6458)	74
Population	1995	World Bank	millions	58.99 (174.41)	76
Average schooling years of population aged 15 or more	1990	Barro and Lee	Year	6.45 (2.52)	72
Index of Corruption-Restraining Institutions	1991	Humana	1=worst 4 = best	2.77 (1.04)	75
Avg. govt. wage/Per capita GDP	1995	Schiavo-Campo et al.	fraction	2.85 (2.07)	60
Proportion of largest ethnic group	1990	Sullivan	percent	73.75 (24.46)	69
Gini-coefficient	1992	World Bank	percent	40.88 (9.41)	62
British colony dummy			dummy	0.32	78
Never been a colony dummy			dummy	0.36	78

Table 6a: Determinants of Corruption, Cross-Country Regressions, OLS

Dependent variable: Transparency International's Corruption Perceptions Index 1998

	1	2	3	4	5	6	7	8
Parliament, percent women	0.071** (0.014)	0.095** (0.013)	0.095** (0.018)	0.089** (0.017)				
Labor force, percent women					0.047** (0.022)	0.032* (0.019)	0.038 (0.024)	0.028 (0.021)
Log(GNP per capita, 1995)	1.729** (0.334)	1.805** (0.229)	1.781** (0.355)	1.742** (0.286)	1.649** (0.322)	1.726** (0.304)	1.490** (0.452)	1.953** (0.380)
Log(population, 1995)	-0.200* (0.104)	-0.194** (0.070)	-0.214** (0.090)	-0.163* (0.094)	-0.340** (0.110)	-0.345** (0.101)	-0.372** (0.131)	-0.301** (0.125)
Average years of schooling 1990	0.070 (0.119)	0.023 (0.075)	0.060 (0.093)	0.056 (0.119)	0.097 (0.117)	0.062 (0.101)	0.073 (0.115)	0.003 (0.153)
Former British Colony (dummy)		2.057** (0.354)	2.180** (0.414)	1.744** (0.476)		1.590** (0.371)	1.878** (0.448)	1.034** (0.456)
Never colonized (dummy)		0.479 (0.418)	0.576 (0.599)	0.237 (0.607)		0.721 (0.493)	0.920 (0.630)	-0.118 (0.706)
Percent in largest ethnic group		0.004 (0.007)	0.009 (0.008)	0.006 (0.008)		0.001 (0.008)	0.007 (0.009)	0.004 (0.009)
Corruption-restraining institutions			-0.016 (0.287)				0.377 (0.326)	
Government wage/GDP per capita			0.110 (0.100)				0.058 (0.129)	
Gini coefficient, income inequality				-0.002 (0.021)				-0.034 (0.022)
Constant	-10.307 (2.373)	-12.056 (1.541)	-12.763 (2.223)	-11.523 (1.908)	-10.286 (2.333)	-11.051 (2.045)	-11.099 (2.842)	-10.927 (2.443)
N	57	57	47	47	66	65	52	51
R^2	.76	.86	.88	.85	.71	.77	.81	.79

Standard errors (in parentheses) are computed using White's heteroskedastic-consistent variance/covariance matrix.
**Significant at .05 for 2-tailed test; * significant at .10.

Table 6b: Determinants of Corruption, Cross-Country Regressions, OLS

Dependent variable: International Country Risk Guide Corruption Score, 1995

	1	2	3	4	5	6	7	8
Parliament, percent women	0.049** (0.009)	0.049** (0.009)	0.050** (0.010)	0.048** (0.010)				
Labor force, percent women					0.031** (0.009)	0.024** (0.010)	0.012 (0.014)	0.027** (0.011)
Log(GNP per capita, 1995)	0.240* (0.136)	0.202 (0.136)	0.318 (0.196)	0.391** (0.168)	0.409** (0.137)	0.274* (0.141)	0.247 (0.241)	0.526** (0.188)
Log(population, 1995)	-0.007 (0.066)	-0.040 (0.057)	-0.072 (0.061)	-0.109* (0.063)	-0.005 (0.055)	-0.036 (0.054)	-0.135* (0.080)	-0.095 (0.065)
Average years of schooling 1990	0.215** (0.052)	0.182** (0.059)	0.254** (0.051)	0.096 (0.080)	0.158** (0.055)	0.137** (0.057)	0.203** (0.072)	0.082 (0.078)
Former British Colony (dummy)		0.644** (0.237)	0.621** (0.239)	0.880** (0.288)		0.234 (0.210)	0.436* (0.247)	0.191 (0.287)
Never colonized (dummy)		0.478* (0.287)	0.324 (0.329)	0.614* (0.366)		0.491 (0.301)	0.614* (0.357)	0.157 (0.433)
Percent in largest ethnic group		0.005 (0.004)	0.002 (0.004)	(0.001) (0.004)		0.006 (0.004)	0.004 (0.006)	0.005 (0.005)
Corruption-restraining institutions			-0.099 (0.146)				0.048 (0.151)	
Government wage/GDP per capita			0.125** (0.054)				0.075 (0.064)	
Gini coefficient, income inequality				-.0002 (.0152)				-0.028** (0.012)
Constant	0.036 (1.026)	-0.069 (0.952)	-1.286 (1.485)	-0.788 (1.384)	-1.564 (1.096)	-0.735 (1.167)	-0.443 (1.786)	-1.008 (1.460)
N	65	65	51	51	88	85	57	61
R^2	.64	.69	.76	.69	.58	.60	.78	.67

Standard errors (in parentheses) are computed using White's heteroskedastic-consistent variance/covariance matrix.
**Significant at .05 for 2-tailed test; * significant at .10.